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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,802	12/02/2003	Osamu Kobayashi	GENSP014	4125
22434	7590	06/22/2006	EXAMINER	
BEYER WEAVER & THOMAS, LLP			LEE, CHUN KUAN	
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Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/726,802	Applicant(s) KOBAYASHI, OSAMU	
	Examiner Chun-Kuan (Mike) Lee	Art Unit 2181	

**- The MAILING DATE of this communication appears on the cover sheet with the correspondence address -**

**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 April 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

*Fritz Fleming*  
Supervisory    FRITZ FLEMING  
PRIMARY EXAMINER 6/21/2006  
GROUP 2100  
#42181

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/17/06 &amp; 5/15/06</u> | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed on 04/27/2006 have been fully considered but they are not persuasive. Currently, claims 1-20 are pending for examination.
2. In responding to applicant's argument regarding the amended independent claims 1, 8 and 15 that Kim does not teach or even remotely suggest that the DVI connector itself (be it an I type or an A type) is reconfigured in any manner let alone reconfigured based upon the nature of both the video source and the video display (such as DVI-I connector being configured as DVI-A connector, or vice versa) and that Kim merely ascertains which type DVI connector is already preset and nothing more, as stated on page 11, last paragraph. Applicant's argument has fully been considered, but is found not to be persuasive.

As reiterated in the amended independent claim 1, the configuration is not associated with the signal cable (connector), but the interfaces connected to the signal cable, wherein the interfaces comprise the video source interface and the video display interface. Examiner relies on Kim's teaching for the determination of the type of video source and the configuration of the corresponding interface and relies on the Clark's teaching for the determination of the type of video display and the corresponding configurations. More specifically regarding Kim's teaching, Kim teaches there are two types of connectors (DVI-D (support only digital signal) and DVI-I (support both digital

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and analog signal), and that regardless which type of connector is utilized the interface associated with the digital display detects if the inputting source signal is a digital signal or an analog signal, in order to set a switch according to the detection (Kim, col. 4, ll. 34-48), wherein the detection is implemented by means of a controller (Kim, Fig. 1, ref. 8).

Please view details below regarding the rejections associated to the amended independent claims 1, 8, and 15.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 8 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (US Patent: 6,577,303) in view of Clark (US Patent: 5,949,437).

4. As per claims 1, 8 and 15, Kim teaches a system, a method and a computer program product connecting a video source and a video display having a configurable video display interface, comprising:

a signal cable (DVI connector of Fig. 1) for connecting a video source to the configurable video display interface (Fig. 1 and col. 4, ll. 13-16), wherein the signal cable comprises the DVI-I type cable and the DVI-D type cable and wherein the video

display interface comprises the analog video processor (Fig. 1, ref. 1), the digital video processor (Fig. 1, ref. 2), the video signal switch (Fig. 1, ref. 3), the synchronous signal switch (Fig. 1, ref. 1) and the controller (Fig. 1, ref. 8);

a processor (controller 8 of Fig. 1) for making an automatic determination of whether the video source is an analog video source or a digital video source (col. 4, ll. 43-48); and

at least one switch (video signal switch 3 of Fig. 1) for configuring the video display interface under control of the processor according to the automatic determination (col. 4, ll. 53-65).

Kim does not teach the system, the method and the computer program product connecting the video source having the configurable video source interface and the video display having the configurable video display interface, comprising the automatic determination of whether the video display is an analog video display or a digital video display; and configuring the corresponding video source interface accordingly.

Clark teaches a system, a method and a computer program product for connecting a video source having a configurable video source interface, comprising:

connecting the video source having the configurable video source interface (Fig. 2, ref. 16, 18, 30) to a video display (Fig. 1-2, ref. 20, 22); and

automatic determining whether the video display (monitor) is analog or digital (Fig. 6, ref. 68) and configuring the video signal properly before output to the corresponding video display (col. 6, ll. 1-14).

It would have been obvious to one of ordinary skill in this art, at the time of invention was made to include Clark's video source interface and automatic determination of the video display into Kim's system and method. The resulting combination of the references teaches the system, method and computer program product further comprising:

the signal cable interconnects the video source interface and the video display interface;

the processor automatically determines if the video display is analog or digital; and

at least one switch for configuring the video source interface base on the processor's determination, as the video signal must be properly configured before output to the corresponding video display.

Therefore, it would have been obvious to combine Clark with Kim for the benefit of providing a multi-display system that enable the connection of analog display as it is more desirable for certain applications to utilize multiple analog displays, such as CAD, video editing and financial applications (Clark, col. 2, ll. 33-35).

5. Claims 2-4, 9-11 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (US Patent: 6,577,303) and Clark (US Patent: 5,949,437), and further in view of the "Digital Visual Interface (DVI), Revision 1.0".

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6. As per claims 2, Kim and Clark teaches all the limitations of claim 1 as discussed above, wherein Kim further teaches that the system, the method and the computer program product connecting the video source having the configurable video source interface and the video display having the configurable video display interface conforms to the Digital Visual Interface (DVI) standard (Kim, col. 4, ll. 1-12).

Kim and Clark do not expressly teach configuration of the coupling device as a doubly terminated twisted pair type connector having a number of communication channels included therein.

The "Digital Visual Interface (DVI), Revision 1.0" teaches the use of a T.M.D.S. (Transition Minimized Differential Signaling) differential pair (doubly terminated twisted pair type) connector to interconnect the transmitter and receiver (Fig. 4-1 and Section 4.1 on page 33) having a number of communication channels included therein (Fig. 2-1, page 10) for both digital and analog video signal and both digital and analog video display.

It would have been obvious to one of ordinary skill in this art, at the time of invention was made to include Digital Visual Interface (DVI), Revision 1.0's T.M.D.S. differential pair interconnection into Kim and Clark's system and method.

Therefore, it would have been obvious to combine "Digital Visual Interface (DVI), Revision 1.0" with Kim and Clark, because Kim and Clark's system conforms to the DVI standard, therefore the T.M.D.S. differential pair interconnection enables proper communicate of video signals over a T.M.D.S. differential pair connection having the plurality of communication channels.

7. As per claim 3, Kim, Clark and "Digital Visual Interface (DVI), Revision 1.0", teaches all the limitations of claim 2 as discussed above, where "Digital Visual Interface (DVI), Revision 1.0" further teaches that the system, the method and the computer program product connecting the video source having the configurable video source interface and the video display having the configurable video display interface further comprising that the DVI standard supports the Extended Display Identification Data (EDID) specification, wherein both DVI compliant systems and monitors must support the EDID data structure, as the data to be transferred must be packetized in accordance to the defined data structure before transferring and depacketized when the data is received ("Digital Visual Interface (DVI), Revision 1.0", Section 1.3.2 on page 8); and therefore the video display connection system method further comprises:

receiving data from the video source (graphic controller) (Fig. 2-1 in page 10);

packetizing the video data to form a packetized video data stream formed of a number of video data packets ("Digital Visual Interface (DVI), Revision 1.0", Section 1.3.2 on page 8);

passing the video data packets by way of selected ones of the communication channels from the video source to the video display (Fig. 2-1 in page 10), as data is transferred over one of the six data channels;

depacketizing the video data packets at the video display (T.M.D.S. receiver) (Fig. 2-1 in page 10); and



generating a displayable image based upon the depacketized video data (Fig. 2-1 in page 10).

8. As per claim 4, Kim, Clark and "Digital Visual Interface (DVI), Revision 1.0", teaches all the limitations of claim 3 as discussed above, where "Digital Visual Interface (DVI), Revision 1.0" further teaches that the system, the method and the computer program product connecting the video source having the configurable video source interface and the video display having the configurable video display interface further comprising:

encoding video data from the video source from an 8-bit format to a 10-bit format ("Digital Visual Interface (DVI), Revision 1.0", Fig. 2-1 and Section 2.1 on page 10 and Section 3.1.4 on page 25);

transmitting the encoded video data from the video source (T.M.D.S. transmitter) to the video display (T.M.D.S. receiver) ("Digital Visual Interface (DVI), Revision 1.0", Fig. 2-1 and Section 2.1 on page 10);

converting (converting by decoding) the encoded video data from the 10-bit format to the 8-bit format at the T.M.D.S. receiver ("Digital Visual Interface (DVI), Revision 1.0", Fig. 3-6 and Section 3.3 on pages 30-31); and

providing the data to the video display (display control) in the 8-bit format ("Digital Visual Interface (DVI), Revision 1.0", Fig. 2-1 and Section 2.1 on page 10).

9. Claims 9-11 and 16-18 repeat the limitations of claims 2-4 and are therefore rejected accordingly.

10. Claims 5-6, 12-13 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (US Patent: 6,577,303), Clark (US Patent: 5,949,437) and the "Digital Visual Interface (DVI), Revision 1.0", and further in view of Bauch et al. (US Pub.: US 2003/0152160).

11. As per claim 5, Kim, Clark and "Digital Visual Interface (DVI), Revision 1.0", teaches all the limitations of claim 4 as discussed above, where "Digital Visual Interface (DVI), Revision 1.0" further teaches that the system, the method and the computer program product connecting the video source having the configurable video source interface and the video display having the configurable video display interface further comprising two T.M.D.S. links ("Digital Visual Interface (DVI), Revision 1.0", Fig. 2-1 and Section 2.1 on page 10), wherein one link comprises of data channel 0 to data channel 2 and the next link comprises of data channel 3 to data channel 5.

Kim, Clark and "Digital Visual Interface (DVI), Revision 1.0" do not expressly teach that the system method and computer program product having connecting the video source and the video display comprising wherein the communication channel is formed of a main link having an associated main link data rate and an auxiliary link having an auxiliary link data rate

Bauch teaches a video display connection system and method comprising wherein the communication channel includes a primary link comprising data channel 0 to data channel 2 having a corresponding pri\_clk and a secondary link comprising data channel 3 to data channel 5 having a corresponding sec\_clk (Fig. 3), wherein the primary link operate at a data rate in accordance to the primary link bit clock and the secondary link operate at a data rate in accordance to the secondary link bit clock ([0031 and [0033]).

It would have been obvious to one of ordinary skill in this art, at the time of invention was made to include Bauch's primary link and secondary link into Kim, Clark and Digital Visual Interface (DVI), Revision 1.0's system and method. The resulting combination of the references teaches that the system, the method and the computer program product connecting the video source having the configurable video source interface and the video display having the configurable video display interface further comprising the primary link (main link) operate at the data rate in accordance to the primary link clock and the secondary link (auxiliary link) operate at the data rate in accordance to the secondary link clock.

Therefore, it would have been obvious to combine Bauch with Kim, Clark and "Digital Visual Interface (DVI), Revision 1.0" for the benefit of including the formation of communication with the primary link having the associated pri\_clk and the secondary link having the sec\_clk would enable a dual single link mode of operation for DVI application, allowing the primary link and the secondary link operate independent of one another (Bauch, [0033]).

12. As per claim 6, Kim, Clark and "Digital Visual Interface (DVI), Revision 1.0", teaches all the limitations of claim 5 as discussed above, where "Digital Visual Interface (DVI), Revision 1.0" further teaches that the system, the method and the computer program product connecting the video source having the configurable video source interface and the video display having the configurable video display interface further comprising wherein the input stream (source video data) is pixel data provided at a native clock rate (CLK frequency), wherein the pixel data is transmitted at the link data rate (T.M.D.S frequency reference) that is different than the native clock rate ("Digital Visual Interface (DVI), Revision 1.0", Fig. 3-1, page 24).

13. Claims 12-13 and 19-20 repeat the limitations of claims 5-6 and are therefore rejected accordingly.

14. Claims 7 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (US Patent: 6,577,303), Clark (US Patent: 5,949,437), the "Digital Visual Interface (DVI), Revision 1.0" and Bauch et al. (US Pub.: US 2003/0152160), and further in view of Hulvey (US Patent 5,940,137).

15. As per claim 7, Kim, Clark and "Digital Visual Interface (DVI), Revision 1.0", teaches all the limitations of claim 5 as discussed above, where "Digital Visual Interface (DVI), Revision 1.0" further teaches the system, the method and the computer program

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product connecting the video source having the configurable video source interface and the video display having the configurable video display interface further comprising wherein the main link data is encoded using 8B/10B encoding (converting the 8-bit format to the 10-bit format) ("Digital Visual Interface (DVI), Revision 1.0", Fig. 3-1, Section 3.1.1 and Section 3.1.4 on pages 24-25).

Kim, Clark, "Digital Visual Interface (DVI), Revision 1.0" and Bauch do not teach the system, the method and the computer program product connecting the video source having the configurable video source interface and the video display having the configurable video display interface further comprising wherein the secondary link is encoded using Manchester II encoding.

Hulvey teaches the transmission of video signal using Manchester encoding (col. 2, ll. 22-34 and col. 5, ll. 10-42).

It would have been obvious to one of ordinary skill in this art, at the time of invention was made to include Hulvey's Manchester encoding into Kim, Clark, "Digital Visual Interface (DVI), Revision 1.0" and Bauch's system and method.

Therefore, it would have been obvious to combine Hulvey with Kim, Clark, "Digital Visual Interface (DVI), Revision 1.0" and Bauch for the benefit of enable more effective data transitions and more accurate clock recovery at the receiver (Hulvey, col.5, ll. 27-32).

16. Claim 14 repeats the limitations of claim 7 and is therefore rejected accordingly.

### Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chun-Kuan (Mike) Lee whose telephone number is (571) 272-0671. The examiner can normally be reached on 8AM to 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fritz M. Fleming can be reached on (571) 272-4145. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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